III. REMARKS AND CONCLUSION

Claims 1-16 are presently pending. The Claim numbering has been corrected, as per the Examiner's request. Further, Claims 1, 4, 5, 8, 11, 13, 14, and 15 have been amended. No estoppel should result from said amendments, as will be explained below. Claims 16 and 17 have been added as new Claims.

A. Specification Objection

The specification is objected to for the use of the trademark Y-PER®. The Examiner notes that the use of a trademark ism acceptable, but that the proprietary nature of the trademark should be respected. Applicant fully agrees with the Examiner. In fact, reference to page 1, line 20, of the specification illustrates the steps taken by Applicant to preserve the proprietary nature of the mark. Applicant uses the mark Y-PER® as an illustration of a yeast protein extraction reagent, as specifically stated. What is more, Applicant has the trademark in capital letters, in parenthesis, to indicate it is an example and not a limitation. Further, Applicant specifically indicates the source of the mark and its use. Accordingly, Applicant respectfully requests reconsideration of the rejection. The mark has been properly used.

B. 35 USC §112, 2nd ¶

Claims 1-15 stand rejected under 35 USC §112, 2nd ¶, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiner contends that Claim 1 is indefinite because it is unclear as to whether the charged amine acids are in the reducing agent or in the

detergent. Further, the Examiner identifies a supposed antecedent basis issue. Applicants have amended the Claim to remove the limitation of a reducing agent. Accordingly, the Examiner's rejection is obviated. As well, no estoppel results from the amendment as the scope of the Claim was broadened.

New Claim 16 has been added to further claim contacting the cell with a reducing agent. Accordingly, there is complete clarity in Claim 1. Applicants respectfully requests reconsideration.

Claim 4 has been amended by removing a limitation. There is no antecedent basis problem and the Claim was not narrowed, no estoppel will result.

Claim 5 stands rejected because the Examiner contends that it is unclear what are the solubility limits of a detergent. Applicant asserts that one of ordinary skill in the art can find the solubility limit of a substance with relative ease. The term is well understood in the art. Accordingly, Applicant respectfully requests reconsideration.

Applicant has amended Claims 11, 13, 14, and 15 to remove the limitation of solution, thereby solving the antecedent basis question by removing the issue. No estoppel should result from the amendment, as the claims are now broader.

C. Rejections under 35 USC § 102(b)

Claims 1-3 and 11-13 stand rejected as being anticipated by the 1992 Horowitz article. The Examiner contends that the 1992 Horowitz article discloses a method of

releasing a protein of interest from a host cell comprising contacting or lysing the cell with a reducing agent and a detergent , wherein the detergent is an amphipathic charged amine or amineoxide. The Examiner lists an example TNBP. Applicant respectfully requests reconsideration, in light of this response.

To begin, neither TnBP nor Triton X-100 are charged amines or charged amine oxides. Secondly, the 1992 Horowitz article teaches the inactivation of viruses in fresh frozen plasma. This article does not mention releasing recombinant proteins from host cells. The inactivation of viruses in fresh frozen plasma using TNBP and Triton X-100 is completely distinct and unrelated in any way to using charged amines or charged amine oxides to extract recombinant proteins from host cells. Viruses are not host cells and the article does not teach the extraction of proteins. The solvent-detergent technology taught by this article does not disclose or suggest a method of releasing a protein of interest from host cells comprising contacting the cells with a detergent, wherein the detergent is an amphipathic charged amine or an amphipathic charged amine oxide.. Further, Applicant contends that reducing agents are not disclosed by the article. Accordingly, Applicant respectfully requests reconsideration.

Claims 1-3 and 11-13 stand rejected as being anticipated by the 1985 Horowitz article. The Examiner contends that the 1985 Horowitz article discloses a method of releasing a protein of interest from a host cell comprising contacting or lysing the cell with a reducing agent and a detergent , wherein the detergent is an amphipathic charged amine or amineoxide. Applicants respectfully requests reconsideration.

Here, as before with the 1992 Horowitz article, the teachings pertain to the inactivation of viruses. Again, neither TnBP nor Triton X-100 are charged amines or charged amine oxides. Secondly, the 1992 Horowitz article teaches the inactivation of viruses in fresh frozen plasma. This article does not mention releasing recombinant proteins from host cells. The inactivation of viruses in fresh frozen plasma using TNBP and Triton X-100 is completely distinct and unrelated in any way to using charged amines or charged amine oxides to extract recombinant proteins from host cells. Viruses are not host cells and the article does not teach the extraction of proteins. Specifically, the article defines TNBP as an organic solvent that is used in combination with Twenen-80 and/or sodium cholate to inactivate viruses present in AHF concentrate. The 1985 Horowitz article does not disclose or suggest a method of releasing a protein of interest from host cells comprising contacting the cells with a detergent, wherein the detergent is an amphipathic charged amine or an amphipathic charged amine oxide. Accordingly, Applicant respectfully requests reconsideration.

Claims 1-3, 11-13 and 15 stand rejected as being anticipated by the Piet article. The Examiner contends that the Piet article discloses a method of releasing a protein of interest from host cells comprising contacting or lysing the cells with a reducing agent and a detergent. Applicants respectfully request reconsideration.

To begin, the Piet article is authored by the same entity as the Horowitz articles (Horowitz is the senior author). The issues stand as above. The teachings relate to inactivating viruses using TNBP and compounds with detergent-like properties. The

detergents cited are not structurally related to the amines/oxides. Further, inactivating viruses and extracting recombinant proteins from host cells are not related.

The work of Horowitz is well known in the bioprocessing industry and the patents coming from that work proved quite valuable to the New York Blood Center. However, Piet does not disclose or suggest a method of releasing a protein of interest from host cells comprising contacting the cells with a detergent, wherein the detergent is an amphipathic charged amine or an amphipathic charged amine oxide. Accordingly, Applicant respectfully requests reconsideration.

D. Rejection Under 35 USC §103(a)

Claims 1-13 stand rejected as being obvious over the '915 patent taken with the '810 patent. The Examiner contends that the '915 patent teaches and discloses a process of releasing a protein, recombinant or otherwise, from a cell by contacting a host cell containing a protein of interest with a solution comprising one or more detergents and one or more reducing agents. The Examiner next states the '915 patent differs from Claims 1-15 in not teaching the use of organic solvents. The Examiner then asserts that the '810 patent teaches using organic solvents. The Examiner concludes that it would have been obvious to one of ordinary skill in the art to combine the references. Applicants respectfully request reconsideration in light of this response.

The '810 patent teaches a modification of the standard two phase separation technique that can be used to separate the protein and cell debris fractions resulting from the homgenizationof microbial cells. The modification is the use of chaotropic agents and/or reducing agents to first solubilize insoluble recombinant proteins prior to forming

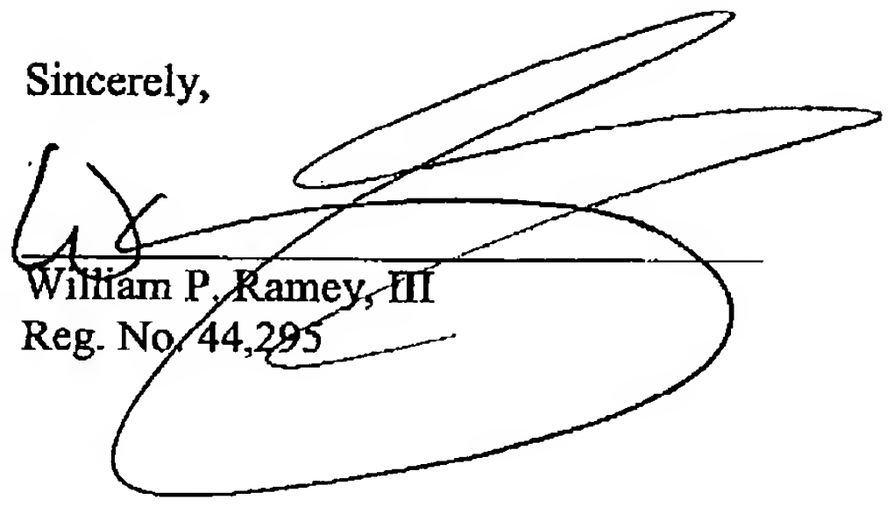
the phase separation. The teachings of the patent include the use of chaotropes and reducing agents so that two-phase separations can be applied to expression systems leading to insoluble target protein. Applicant's invention does not employ a 2 phase separation. Applicant does not use chaotropic agents. Further, Applicant is recovering soluble target proteins from whole cells, not a homogenate.

Likewise, the '915 patent teaches a very specific, multi-step process of preparing a chaotrope washed yeast membrane preparation and then releasing a particular membrane bound recombinant protein from the washed yeast membrane preparation using the compound octoxynol-9.5. Again, Applicant's invention does not employ chaotropic agents. In Applicant's invention, proteins are extracted in their native state from whole cells, not a washed membrane preparation that resulted from a homogenization step, as in the cited art.

Accordingly, the combination of the two patents is not Applicant's invention. Moreover, the combination of the two patents does not suggest Applicant's invention. Therefore, Applicants respectfully request reconsideration.

In conclusion, the application is believed in a condition for allowance and Applicant respectfully requests such action. If the Examiner feels that an interview may best further the prosecution of the case, Applicant extends an invitation for the Examiner to call the below undersigned attorney for any assistance in securing allowance of this application. Please charge deposit account number 02-2334 for any required fees and to credit any credits.

Sincerely,



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